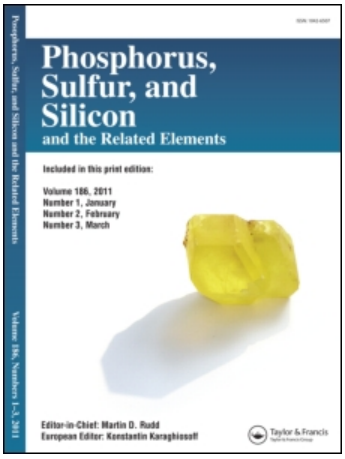

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New Synthetic Method of Dicarboxyphenylphosphonic Acids

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New Synthetic Method of Dicarboxyphenylphosphonic Acids

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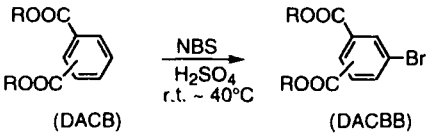
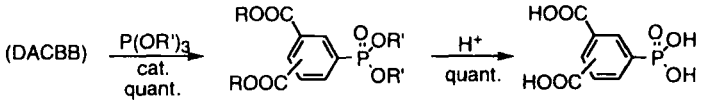
Some dicarboxyphenylphosphonic acids (**DCPPA**) were prepared by new process. We succeeded in introducing two carboxyl groups into the phenyl group of phenylphosphonic acid. The dialkyl iso- and tere-phthalate (**DACB**) were conveniently brominated with NBS /H_2SO_4 system to provide the corresponding bromides (**DACBB**) in good yields and good selectivities.



(DACB) (DACBB)

DACB	Yield of DACBB (%)
isophthalate	> 87
terephthalate	> 75

DACBB was easily reacted with trialkyl phosphite in the presence of an appropriate catalyst (1 - 5 mol% of $PdCl_2$, $NiCl_2$, etc.) at 140 - 160℃ to yield the novel dialkylcarbonylphenylphosphonates (**DCPPE**). Then, **DCPPE** was treated with inorganic acid such as HCl under reflux condition to give **DCPPA** in high yield and high purity.



(DCPPE) (DCPPA)

DCPPA and their derivatives are able to convert into other useful compounds and expected to use for a flame retardant of general resins, feeling improver of several fibres, and so on. Kg scale manufactures of these compounds have been already performed by this process and now we are developing them to all over the world.